



**Disaster Strikes –
Do you have an Environmental
Health Emergency Response Plan?**

**Lesson 3 – Detailed
Roles and Responsibilities when EHP
Respond to a Disaster/Emergency**



EH Roles


- Assess
- Intervene
- Educate/Communicate



**Food & Waterborne
Outbreak Investigation**

Assessment


- Conduct inspection of the facility
- Identify basic food safety issues such as proper food temperatures, food storage, cross-contamination, cleaning and sanitizing, hand washing and personal hygiene
- Assist in development of a sampling plan and coordinate sampling and analysis of food, water or other materials
- Assist with interviewing patrons and/or employees
- Assist in the determination of fitness of foods for consumption



**Food & Waterborne
Outbreak Investigation (Cont.)**

Intervention


- Assist other disaster-response agencies with food transport, storage and distribution logistics
- Assist with sorting, condemnation, and disposal of contaminated food at commercial establishments
- Determine corrective actions and make recommendations to facility managers, homeowners, and public health officials or other agency officials



**Food & Waterborne
Outbreak Investigation (Cont.)**

Communication/Education


- Maintain frequent communication with all parties
- Provide collected information to epidemiologists
- Provide the public and businesses with information regarding the protection of perishable food, as well as proper preparation, storage, and disposal of foods under emergency conditions



Vector Control

Assessment


- Assess conditions in the disaster area (e.g., standing water, uncollected and exposed solid waste containing food waste, damaged sewer system) that may promote increase in vector populations
- Assist in conducting environmental related disease investigations related to water and other disease vehicles/vectors
- Assist/collect vectors for lab analysis
- Assist local mosquito control agency as needed



Vector Control (Cont.)

Intervention


- Provide assistance and oversight related to implementation of control measures
- Determine corrective actions, report findings and recommendations to public works and health authorities
- Work with private and public refuse haulers to reinstate regular collection or arrange for special collections
- Contact local mosquito control agency applying vector-control measures in the affected area



Vector Control (Cont.)

Communication/Education


- Provide information to the public regarding vector-borne disease control measures



Drinking Water Supply and Safety

Assessment

- Ascertain exposure pathways
- Assist with preparation of a sampling plan
- Collect water samples
- Assist and coordinate sampling activities with other agencies
- Qualitatively assess the impact on water resources in the impacted area
- Assist with public water system inspections and document damage
- Conduct public health assessments of community and non-community water systems and private wells
- Conduct damage assessments of community and non-community water systems and private wells-document damage



Drinking Water Supply and Safety (Cont.)

Intervention

- Determine corrective actions and provide recommendations and information to water system operators, facility managers, homeowners, and others
- Prioritize special needs of susceptible populations at risk from dehydration, waterborne disease and contamination
- Coordinate delivery of bulk and bottled potable water supplies
- Ensure disinfection of distribution systems, storage tanks and water hauling tankers
- Assist with public water system inspections and document damage
- Conduct public health assessments of community and non-community water systems and private wells
- Assist and coordinate emergency restoration or replacement of treatment, storage and distribution systems



Drinking Water Supply and Safety (Cont.)

Communication/Education

- Communicate with public-water utilities about extent of damage
- Notify public about condition of water and needed actions
- Notify public about availability and location of potable water
- Disseminate information about water needs and rationing
- Provide information to the public on water disinfection and storage
- Provide information to the public describing well disinfection



Wastewater

Assessment

- Assess the impacts of released wastewater on groundwater, surface water, drinking water supplies and recreational waters
- Conduct surveys or damage assessments of waste water systems, including private on-site systems, and temporary or emergency systems for disaster areas
- Develop a sampling plan and coordinate sampling and analysis
- Conduct surveys or assessments of facilities and practices regarding hygiene and disposal of human waste



Wastewater (Cont.)

Intervention

- Coordinate provision of emergency waste disposal facilities
- Oversee the placement and/or construction of alternative systems (e.g., chemical toilets, "port-a potties," & latrines)
- Monitor functioning and maintenance of alternative systems
- Prevent or mitigate public health nuisance issues (e.g., odors, vectors)
- Determine corrective actions and make recommendations to water operators, facility managers, the public, and other parties



Wastewater (Cont.)

Communication/Education

- Provide information to the public regarding proper emergency sewage disposal methods
- Provide public information related to disease prevention
- Post hazard warnings
- Promote healthy behavior such as hand-washing techniques



Mass Care

Assessment

- Provide advice on shelter site selection, and organization and layout
- Assist building officials and structural engineers in determining the habitability of pre-identified shelters
- Evaluate shelter facilities for: potable water, management of waste water and solid waste, food sanitation, personal safety, air quality, vector control, and personal hygiene amenities



Mass Care (Cont.)

Intervention

- Assist with and/or conduct inspections of mass care sites
- Assist other responding agencies in the planning and development of temporary housing sites
- Provide housing sanitation guidance and oversight in disaster aftermath
- Identify and address problems related to: pest infestations, living requirements (e.g., lighting, temperature, solid/liquid waste disposal, sleeping arrangements, housekeeping, personal hygiene), and infectious medical waste management



Mass Care (Cont.)

Communication/Education

- Promote healthy behaviors and encourage safety to people living at a shelter
- Advise decision makers regarding public health concerns at shelters



Solid Waste Management

Assessment

- Check with appropriate contacts to determine extent of solid waste management system disruption
 - County environmental and/or emergency management staff
 - Solid waste facility operators
 - Waste haulers – private and municipal
 - Recyclers



Solid Waste Management (Cont.)

Intervention

- Ensure that solid waste is properly and promptly stored, collected and disposed of to prevent vector nuisances (e.g., flies and rodents), odor problems, or potential contamination of food and water
- Serve as liaison with functioning facilities and collection services to try and ensure continuity of solid waste management services
- Work with appropriate contacts to publicize the availability of emergency disposal and/or transfer sites
- Serve as liaison between disaster site cleanup operations, waste haulers and disposal facilities. Determine if existing disposal sites are capable of accepting and properly disposing of waste.



Solid Waste Management (Cont.)

Communication/Education

- Provide information and guidance to businesses and the public about changes in the solid waste management system resulting from the disaster
- Provide public information about separation and storage, collection, and sites available for the disposal of solid waste
- Provide public information regarding disease prevention, vector control and safety



Hazardous Waste

Assessment

- Determine if hazardous generators/facilities are causing the disaster or could be affected by the disaster
- Perform hazard assessment of hazardous waste or released material to identify possible health affects (acute and chronic)



Hazardous Waste (Cont.)

Intervention

- Provide technical consultation, training and planning to IC, emergency responders, public health officials and others regarding:
 - Impacts of decisions or activities on public health
 - Sampling techniques and strategies
 - Re-entry into contaminated areas
 - Long-term monitoring of the environment
 - Long-term monitoring of exposed population
- Conduct environmental sampling
- Monitor how the waste is disposed of to ensure it complies with regulations
- Potentially provide oversight/direction of the hazardous waste incident response and clean-up



Hazardous Waste (Cont.)

Communication/Education

- Provide public information on the health effects of toxic substances
- Provide public information to minimize the risk of exposure in the event of a release



Household Hazardous Waste

Assessment

- Assess nature of program disruption
- Determine timeline for reestablished service



Household Hazardous Waste (Cont.)

Intervention

- Work with existing contractors to assess their capacity to manage increased volumes of household hazardous waste
- Evaluate options for providing alternative household hazardous waste collection service to the public
- Discourage washing or disposing of hazardous materials into the sewers, drains or soil
- Inspect household hazardous waste drop-off facilities



Household Hazardous Waste (Cont.)

Communication/Education

- Provide information about waste collection activities for homeowners



Medical/Infectious Waste

Assessment

- Check with appropriate contacts to determine extent of disruption to medical/infectious waste management system
- Determine availability of infectious waste haulers
- Determine the operational status of infectious waste treatment/processing facilities serving the affected area



Medical/Infectious Waste (Cont.)

Intervention

- Ensure that medical/infectious waste is properly and promptly stored, collected and managed
- Serve as liaison with functioning facilities and collection services to try and ensure continuity of management services
- Determine the operational status of medical waste receiving facilities and availability of medical waste transporters
- Determine if emergency public health authority is needed to ensure proper storage and management of medical wastes
- Inspect medical waste facilities



Medical/Infectious Waste (Cont.)

Communication/Education

- Provide technical assistance to facilities, if needed, in separating wastes requiring different types of disposal, and in determining capacity and location of wastes that may need temporary storage
- Provide information for healthcare facilities regarding changes in the waste management system due to the disaster
- Provide regulatory oversight as needed



Chemical Incident

• Assessment

- Qualitatively assess the impact of the incident on air quality, and food and water resources near the release
- Conduct and/or assist with environmental injury, illness or exposure investigations
- Monitor extent of casualties and alert distant health care facilities
- Conduct interviews of people exposed to chemical agent
- Prepare or assist with sampling plan
- Contact regulated establishments in the affected area to assess their operation



Chemical Incident (Cont.)

Intervention

- Work with appropriate emergency responders and governmental agencies regarding public safety
- Monitor response personnel's health and safety
- Ensure safe conditions exist at emergency shelters
- Assist with and coordinate the availability of immediate medical treatment for those who need it
- Coordinate and assist with food, water, soil or vegetative samples



Chemical Incident (Cont.)

Communication/Education

- Provide information to the public about the incident; measures taken to contain the release; health effects of exposure; and what the public can do to protect themselves
- Provide accident and emergency departments with information about the nature of the chemical agent and precautions to be taken
- Provide information and technical guidance to the public and others regarding clean-up and decontamination



Radiological Incident

Assessment

- Conduct and/or assist with environmental injury, illness or exposure investigations
- Monitor extent of casualties and alert distant health care facilities
- Conduct interviews of people exposed to radiological agent
- Prepare or assist with sampling plan
- Contact regulated establishments in the affected area to assess their operation



Radiological Incident (Cont.)

Intervention

- Work with appropriate emergency responders and governmental agencies regarding public safety
- Ensure safe conditions exist at emergency shelters
- Assist with and coordinate the availability of immediate medical treatment for those who need it
- Coordinate and assist with food, water, air, soil or vegetative samples
- Assist with and conduct personal monitoring at a designated reception center
- Assist with epidemiological surveillance and monitor individuals for long-term health effects due to exposure



Radiological Incident (Cont.)

Communication/Education

- Provide information to the public about the incident; measures taken to contain the release; health effects of exposure; and what the public can do to protect themselves
- Provide accident and emergency departments with information about the nature of the radiological agent and precautions to be taken
- Provide information and technical guidance to the public and others regarding clean-up and decontamination



Floods

Assessment

- Conduct community-wide, rapid qualitative assessment to determine status of: building habitability (heat, electricity, sanitary and septic systems, potable water, mold & sediment residue) for homeowners and regulated establishments, vulnerable populations, debris, hazardous materials and dead animals
- Contact affected regulated establishments and institutions to arrange for on-site visits



Floods (Cont.)

Intervention

- Coordinate response efforts with other governmental and non-profit agencies
- Collaborate with other agencies to develop a recovery plan
- Conduct inspections of emergency shelters and mass feeding sites and provide advice
- Work with and provide technical assistance to affected homeowners, establishments and institutions
- Monitor and track affected areas regarding resumption and availability of potable water, electrical service, sanitary and septic systems, and garbage collection



Floods (Cont.)

Communication/Education

- Provide fact sheets and/or technical guidance to affected establishments, institutions and homeowners dealing with: debris, proper clean-up strategies and techniques, salvaging and discarding food and beverages, mold, sewage, private wells and disinfection, hazardous household chemicals, and vector and waterborne disease issues



Tornados/Wind Damage

Assessment

- Conduct community-wide, rapid qualitative assessment to determine status of: building habitability (heat, electricity, sanitary and septic systems, and potable water) for homeowners and regulated establishments, vulnerable populations, debris, hazardous materials and dead animals
- Contact affected regulated establishments and institutions to arrange for on-site visits



Tornados/Wind Damage (Cont.)

Intervention

- Coordinate response efforts with other governmental and non-profit agencies
- Collaborate with other agencies to develop a recovery plan
- Conduct inspections of emergency shelters and mass feeding sites and provide advice
- Work with and provide technical technical assistance to affected homeowners, establishments and institutions
- Monitor and track affected areas regarding resumption and availability of potable water, electrical service, sanitary and septic systems, and garbage collection



Tornados/Wind Damage (Cont.)

Communication/Education

- Provide fact sheets and/or technical guidance to affected establishments, institutions and homeowners dealing with: debris, proper clean-up strategies and techniques, salvaging and discarding food and beverages, mold, sewage, private wells and disinfection, hazardous household chemicals, and vector and waterborne disease issues



Winter Storms

Assessment

- Conduct community-wide, rapid qualitative assessment to determine status of: building habitability (heat, electricity, sanitary and septic systems, and potable water) for homeowners and regulated establishments, vulnerable populations, debris (fallen trees and branches), hazardous materials and dead animals
- Contact affected regulated establishments and institutions to arrange for on-site visits



Winter Storms (Cont.)

Intervention

- Coordinate response efforts with other governmental and non-profit agencies
- Collaborate with other agencies to develop a recovery plan
- Conduct inspections of emergency shelters and mass feeding sites and provide advice
- Work with and provide technical assistance to affected homeowners, establishments and institutions
- Monitor and track affected areas regarding resumption and availability of potable water, electrical service, sanitary and septic systems, and garbage collection



Winter Storms (Cont.)

Communication/Education

- Provide fact sheets and/or technical guidance to affected establishments, institutions and homeowners dealing with: debris, salvaging and discarding food and beverages, sanitary and septic systems, and private wells.



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